

from October 24, 1997 up to and including January 24, 1998,  
and have paid the requisite fee [37 C.F.R. §§ 1.136(a),  
1.17].

Kindly amend the application as follows:

IN THE CLAIMS

Kindly amend the claims as follows:

16. (Twice amended) An HLA-DR typing process  
comprising the steps of:

(a) restricting DNA isolated from an individual  
to be typed with at least one restriction endonuclease;

(b) size fractionating the restricted DNA;

(c) hybridizing the size-fractionated DNA to a  
DNA sequence of any one of claims 23-24 and 34-39; [and]

(d) detecting [the areas of] hybridization  
between said DNA and said DNA sequence; and

(e) comparing said hybridization to hybridization  
between DNA of known HLA-DR type and said DNA sequence.

17. (Twice amended) The process of claim 16 or  
44, wherein a [<sup>32</sup>P]-labelled DNA sequence is employed for  
hybridization and its [radioactive] label is used for  
detecting hybridization between said DNA and said DNA  
sequence.

23. (Twice amended) An isolated DNA sequence  
encoding a portion of at least one  $\beta$ -chain antigen of the

HLA-DR locus of the human lymphocyte antigen complex, said DNA sequence being selected from the group consisting of:

(a) the DNA sequences of DR- $\beta$ -A, DR- $\beta$ -B and DR- $\beta$ -C<sub>1</sub>[,] *Are these defined?*

(b) the expressed portion of the DNA sequences of DR- $\beta$ -A, DR- $\beta$ -B and DR- $\beta$ -C<sub>1</sub>[,] *defined*

*N.M.*  
(c) DNA sequences that specifically hybridize [under high criterium] to any of the foregoing sequences[,] *(means bigger than)*

*C2*  
*cont.*  
(d) DNA sequences that, upon expression, code for a portion of a polypeptide encoded by any one of the foregoing DNA sequences, said portion comprising a region of mismatch between any two of the foregoing DNA sequences, and which specifically hybridize [under high criterium] thereto[,] and

*any one of the "foregoing sequences"*  
(e) DNA sequences which[, as a result of the genetic code are degenerate to] differ from any of the foregoing DNA sequences in codon sequence due to the degeneracy of the genetic code.

24. (Twice amended) The DNA sequence of claim 23, wherein said DNA sequence [(b)] (c) which specifically hybridizes to said DNA sequence (a) or (b) is selected from the group consisting of:

(f) the DNA sequence of DR- $\beta$ -D<sub>1</sub>[,]

C2  
cont.

(g) DNA sequences which specifically hybridize [under high criterium] to the DNA sequence of DR- $\beta$ -D<sub>1</sub>[,]

(h) DNA sequences that, upon expression, code for a portion of a polypeptide encoded by the DNA sequence of DR- $\beta$ -D, said portion comprising a region of mismatch between said DNA sequence and any one of the DNA sequences of DR- $\beta$ -A, DR- $\beta$ -B and DR- $\beta$ -C<sub>1</sub>[,] and

(i) DNA sequences which[, as a result of the genetic code are degenerate to] differ from any of the foregoing DNA sequences in codon sequence due to the degeneracy of the genetic code.

C3  
cont.

30. (Twice amended) The HLA-DR typing process of claim 16 or 44, further comprising the step of hybridizing said [the size-fractionated] DNA to a hybridization control, said hybridization control being a 19-mer of the formula GCTTCGACAGCGACGTGGG.

31. (Twice amended) An isolated DNA sequence which specifically hybridizes to an HLA DR- $\beta$ -chain locus, said DNA sequence being capable of specifically hybridizing to a polymorphic region of said locus to allow determination of one or more HLA alleles for use in HLA DR- $\beta$  typing, said polymorphic region being encoded by DNA selected from the group consisting of:

- C3  
Cont.
- (a) DNA sequences encoding amino acids 8-14 of said locus;
  - (b) DNA sequences encoding amino acids 26-32 of said locus;
  - (c) DNA sequences encoding amino acids 72-78 of said locus;
  - (d) portions of any one of the foregoing DNA sequences which are capable of specifically hybridizing to said polymorphic region;
  - (e) DNA sequences which are fully complementary to any of the foregoing DNA sequences; and
  - (f) DNA sequences which[, as a result of the genetic code are degenerate to] differ from any of the foregoing DNA sequences in codon sequence due to the degeneracy of the genetic code.

32. (Twice amended) An isolated DNA sequence which specifically hybridizes to an HLA Class II  $\beta$ -chain locus, said DNA sequence being capable of specifically hybridizing to a polymorphic region of said locus to allow determination of one or more HLA alleles for use in HLA  $\beta$  typing, said polymorphic region being encoded by DNA selected from the group consisting of:

- (a) DNA sequences encoding amino acids 8-14 of said locus;

(b) DNA sequences encoding amino acids 26-32 of said locus;

(c) DNA sequences encoding amino acids 72-78 of said locus;

(d) portions of any one of the foregoing DNA sequences which are capable of specifically hybridizing to said polymorphic region;

(e) DNA sequences which are fully complementary to any of the foregoing DNA sequences; and

(f) DNA sequences which[, as a result of the genetic code are degenerate to] differ from any of the foregoing DNA sequences in codon sequence due to the degeneracy of the genetic code.

33. (Twice amended) A DNA sequence which specifically hybridizes to an HLA DR- $\beta$ -chain locus, said DNA sequence being capable of specifically hybridizing to a conserved region of said locus to allow determination of one or more HLA alleles for use in HLA typing, said conserved region comprising a DNA sequence selected from the group consisting of:

(a) DNA sequences encoding amino acids 39-45 of said locus;

(b) portions of the foregoing DNA sequences which are capable of specifically hybridizing to said conserved region;

C3  
cont.

C3  
cont.

(c) DNA sequences which are fully complementary to any of the foregoing DNA sequences; and

(d) DNA sequences which[, as a result of the genetic code are degenerate to] differ from any of the foregoing DNA sequences in codon sequence due to the degeneracy of the genetic code.

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C4

41. (Amended) An HLA-DR typing process comprising the steps of:

(a) restricting DNA isolated from an individual to be typed with at least one restriction endonuclease;

(b) size fractionating the restricted DNA; [and]

(c) hybridizing the size-fractionated DNA to a DNA sequence according to any one of claims 31-33;

(d) detecting hybridization between said DNA and said DNA sequence; and

(e) comparing said hybridization to hybridization between DNA of known HLA-DR type and said DNA sequence.

42. (Amended) An HLA-DR typing process comprising the steps of:

(a) hybridizing DNA in a sample to be tested to a DNA sequence according to any one of claims 31-33; [and]

(b) detecting [the] hybridization between said DNA and said DNA sequence; and

(c) comparing said hybridization to hybridization between DNA of known HLA-DR type and said DNA sequence.

44. (Amended) An HLA-DR typing process comprising the steps of:

C14  
cont.  
(a) hybridizing DNA in a sample to be tested to a DNA sequence according to any one of claims 23-24 and 34-39; [and]

(b) detecting [the] hybridization between said DNA and said DNA sequence; and

(c) comparing said hybridization to hybridization between DNA of known HLA-DR type and said DNA sequence.

Add the following claims:

49. A process for detecting HLA DR- $\beta$ -chain DNA in a sample, comprising the steps of:

C5  
(a) hybridizing DNA in said sample to a DNA sequence according to any one of claims 23-24 and 34-39; and

(b) detecting hybridization between said DNA and said DNA sequence.

50. A process for detecting HLA DR- $\beta$ -chain DNA in a sample, comprising the steps of:

(a) hybridizing DNA in said sample to a DNA sequence according to any one of claims 31-33; and

(b) detecting hybridization between said DNA and said DNA sequence.

Cancel, without prejudice, claims 43, 45 and 48.